

[54] **SPIRAL PROBE FOR SIMULTANEOUS ELECTRICAL AND CHEMICAL MONITORING OF A FETUS**

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[21] Appl. No.: **832,529**

[22] Filed: **Feb. 24, 1986**

Related U.S. Application Data

[63] Continuation of Ser. No. 616,440, May 31, 1984, abandoned, which is a continuation-in-part of Ser. No. 425,036, Sep. 24, 1982, abandoned.

[51] Int. Cl.⁴ **A61B 5/00; A61B 5/04**

[52] U.S. Cl. **128/634; 128/642**

[58] Field of Search **128/634, 635, 642**

References Cited

U.S. PATENT DOCUMENTS

4,200,110 4/1980 Peterson et al. 128/634
4,244,375 1/1981 Farrar et al. 128/642

4,281,659 8/1981 Farrar et al. 128/642
4,294,258 10/1981 Bernard 128/642
4,321,931 3/1982 Hon 128/642

FOREIGN PATENT DOCUMENTS

7419624 9/1974 Fed. Rep. of Germany 128/642

OTHER PUBLICATIONS

Aarnoudse et al, "Fetal . . . PO₂ and Abnormal Heart Rate During Labor", Am. J. Ob. & Gyn., vol. 158, No. 5, Nov. 1985.

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[57] ABSTRACT

A combined spiral EKG electrode and pH probe for use in monitoring a fetus during labor is described. The combined probe includes a spiral-shaped needle which acts as an EKG electrode and also houses a fiberoptic pH probe. Optical fibers and wires from the needle as well as from a reference electrode on the probe assembly are passed back through the cervix and vagina of a woman in order to provide simultaneous information as to both EKG and pH of the fetus during labor.

3 Claims, 8 Drawing Figures

